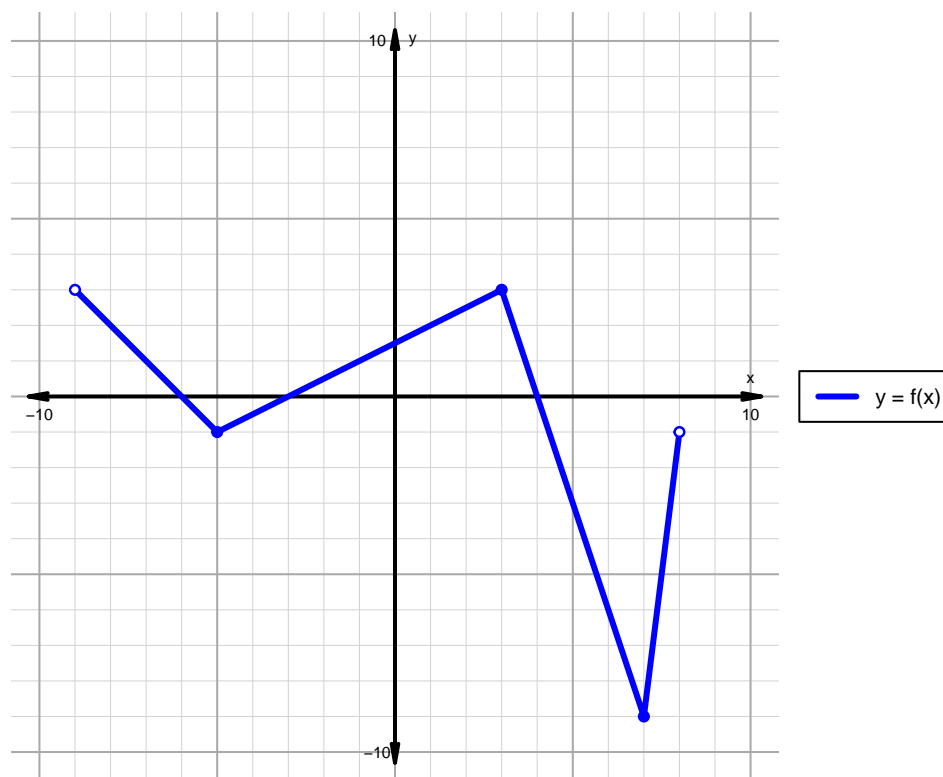


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 27)**

1. The function  $f$  is graphed below.

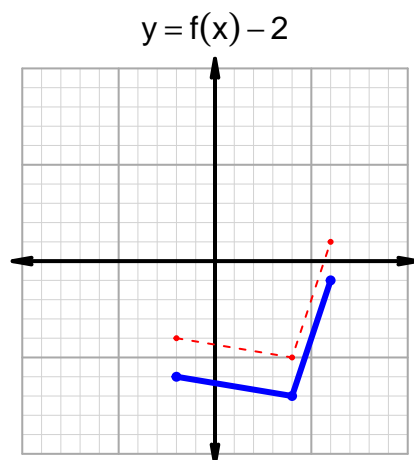
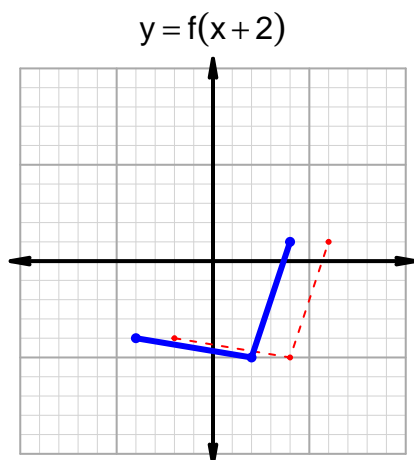
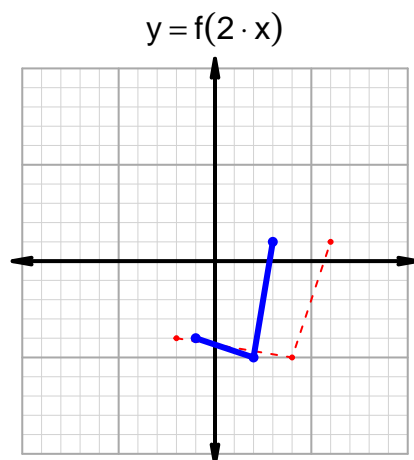
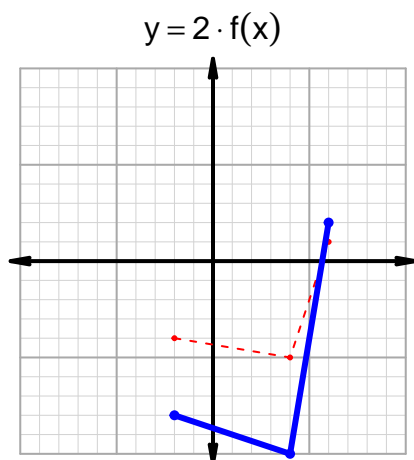


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-9, -6) \cup (-3, 4)$
Negative	$(-6, -3) \cup (4, 8)$
Increasing	$(-5, 3) \cup (7, 8)$
Decreasing	$(-9, -5) \cup (3, 7)$
Domain	$(-9, 8)$
Range	$(-9, 3)$

## Intervals, Transformations, and Slope Solution (version 27)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 34$  and  $x_2 = 46$ . Express your answer as a reduced fraction.

$x$	$g(x)$
34	85
46	71
71	34
85	46

$$\frac{f(46) - f(34)}{46 - 34} = \frac{71 - 85}{46 - 34} = \frac{-14}{12}$$

The greatest common factor of -14 and 12 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{6}$$